

Interactive Media- Design & Development

Grade Levels: 10-12

Units of Credit: 1

CIP Code: 11.0210

Prerequisite: Keyboarding Proficiency and Computer Technology (Computer Literacy)

Skill Certification Exam: #810

COURSE DESCRIPTION

Interactive Media is the process of planning, instructional design, and development. Interactive Media I - Design and Development is the first-year interactive media course where students will create and learn using elements of text, graphics, animation, sound, video, and digital imaging to create interactive computer applications to be delivered on CD-ROM, Internet or other media. These skills will prepare students for entry-level multimedia positions and will provide fundamental interactive media understandings and skills beneficial for other occupational/educational endeavors.

Course Standards and Objectives

Standard 01 – Career Opportunities

Students will develop an awareness of interactive media career opportunities.

Objectives

0101 Terminology – Students will be literate in interactive media career opportunities.

0102 Develop career awareness related to working in the interactive media industry.

- Identify personal interests and abilities related to interactive media careers
 - Identify personal creative talents
 - Identify technical talents (i.e. programming, problem solving, algorithmic thinking, and so forth)
 - Identify organizational and leadership skills
 - Explore aptitude for innovation and creativity
 - Determine aptitude for working as a member of a interactive media team (focus on collaboration)
- Identify interactive media career fields
 - Graphic Artist/Designer
 - Programmer
 - Digital media Designer/Developer
 - Media/Instructional Designer
 - Web Designer/Specialist
 - Investigate career and training opportunities, trends, and requirements (i.e. certifications)
- Identify the members of a interactive media team: graphic/commercial artist, project manager, technical writer, application programmer, video and sound specialist, and subject matter expert, instructional designers, art director, copy-writer, and so forth)
- Describe work performed by each member of the interactive media team
- Investigate trends associated with interactive media careers
- Develop a realistic Student Education Occupation Plan (SEOP) to help further guide educational pursuits
- Identify factors for employability and advancement in interactive media careers (i.e. professional developments)
- Survey and research existing interactive media businesses to determine what training is required
- Survey and research universities and colleges to determine available training
- Develop employability competencies/characteristics: responsibility, dependability, ethics, respect, and cooperation
- Exhibit high standards of personal performance with a positive work ethic and attitude

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Standard 02 – Interactive Media Computer Functions

Students will demonstrate the ability to perform common interactive media computer functions on a standard platform (*PC, Mac, Linux*).

Objectives:

0201 Terminology -- Students will be literate in interactive media computer functions.

0202 Perform basic computer functions.

- Utilize the *Clipboard*
- Utilize shortcut keys and quick-stroke commands where applicable in software applications and OS to improve performance.
- Convert and compress files using appropriate codec
- Back up files
- Assess management, creating folders, naming conventions, etc.

0203 Students will learn to use information available to solve problems using teammates, help menus, Internet searches and other appropriate sources to become self-directed learners.

0204 Understand and discuss the components of a basic interactive media computer system and peripherals.

0205 Adhere to the individual school's acceptable use policy.

Standard 03 – Visual Design Concepts

Students will recognize and apply effective visual design concepts

Objectives

0301 Terminology – Students will be literate in visual design concepts.

0302 Visual Design Elements -- Students will recognize and apply the following elements and principles:

- Shape Form (Shape is 2D and Form is 3D)
- Line
- Value (contrast)
- Texture
- Size
- Space (positive and negative)
- Color
- Emphasis
- Balance/Alignment
- Unity/Rhythm

0303 Color Theory -- Students will recognize and apply the following concepts:

- Properties (Hue, saturation, value)
- Color Schemes (complimentary, analogous, triadic, monochromatic)
- Symbolism/Emotion (warm, cool colors. What do different colors mean in different cultures?)
- Color depth/palettes (dithering)
- Color modes (RGB, CMYK, Grayscale)

0304 Typography -- Students will recognize and apply the following concepts:

- Font (typeface/families, style/attributes, size)
- Typeface Design (serif, sans-serif, decorative)
- Text Layout Techniques (leading, kerning, alignment, tracking, readability)
- Trends (past, present, and future)

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0305 Image Composition-- Students will recognize and apply the following concepts:

- Mergers, simplicity, leading lines, rule-of-thirds, point-of-view, field-of-view, and framing
- Resolution
- Anti-aliasing
- Lighting

Standard 04 – Planning, Design, & Development

Students will demonstrate proper planning and design by utilizing an instructional design model such as ADDIE, Adobe Professional Design, Rapid Deployment Model, and so forth in the development of *interactive media projects*.

Objectives

0401 Terminology – Students will be literate in project planning, design, and development.

0402 Understand and use the ADDIE Model.

- *Analyze* -- gather and process contextual information affecting the goals, structure, purpose, content, audience, and design of a project.
- *Design*-- plan the general look and scope of the application and the media it will use, along with the budget, tools, objectives, outline content, storyboard, and schedule.
- *Develop* – collect & create interactive media content and testing of the application
- *Implement* – publish the finished project and make it available to its audience.
- *Evaluate* -- assess the effectiveness of the project with the target audience and make adjustments in future revisions.

0402 Understand and use the Adobe professional design and development process (Adobe, *Digital Design*, 2007, Unit 3, page 4)

- *Define* -- Goals, target audience, content, and delivery requirements
- *Structure* – Flowchart to portray the overall structure and screen views of the project
- *Design* – design of comps, review with client, redesign from client feedback, and production storyboard
- *Build and test* – project production based on storyboards, technical and usability testing, revision, and final project presentation
- *Launch* – launch and publish project

Standard 05 – Team Activities

Students will participate in individual and team (group) activities.

Objectives

0501 Terminology – Know and review pertinent terminology.

0502 Demonstrate the ability to work individually in the completion of interactive media projects.

- Demonstrate oral, written, and/or technological communication skills
- Apply management skills in finding solutions to project problems
- Demonstrate personal initiative in problem solutions
- Complete projects according to specified deadlines

0503 Demonstrate the ability to work as a team member in the completion of interactive media projects.

- Demonstrate oral, written, and/or technological communication skills
- Apply management skills in finding solutions to project problems
- Utilize organizational skills
- Demonstrate leadership ability
- Demonstrate willingness to compromise to meet team objectives
- Function as a responsible team member
- Describe the roles and responsibilities of members of a interactive media team (i.e., project manager, programmer, graphic artist, audio/video specialist, subject matter expert (*SME*), animator, etc.)

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Standard 06 -- Text

Text -- Students will effectively use text

Objectives

0601 Terminology – Students will be literate in effective use of text.

0602 Typography -- Students will recognize and apply the following concepts:

- Font (typeface/families, style/attributes, size)
- Typeface Design (serif, sans-serif, decorative/other)
- Text Layout Techniques (leading, kerning, tracking, alignment symmetric and asymmetric)

0603 Written communication – Students will demonstrate oral and written communication skills

0604 Readability -- Use text format to effectively communicate content

- Spelling and Grammar
- Organization (Headings, indents, bullets, interface, navigation, etc.)

Standard 07 -- 2D Graphics

Students will produce 2D graphics.

Objectives

0701 Terminology – Students will be literate in the production of 2D graphics.

0702 Raster Graphics -- Students will create, manipulate and appropriately use *bitmap (raster)* graphics

- Identify graphic formats and their appropriate use (e.g., JPG, GIF, TIF, BMP, PSD, PNG, PDF, EPS, etc.)
- Acquiring image assets (scanning, digital camera, internet search, stock sources, etc)
- Create images using a digital camera using appropriate settings
- Use appropriate visual design and image composition techniques
- Export/import images for project requirements (compression, resolution)
- Use the following techniques to effectively enhance an image
 - Crop
 - Resize
 - Straighten Image
 - Use Layers
 - Adjust color, contrast,
 - Mask
 - Selections
 - Transform
 - Restore Images
 - Apply Filters and Effects
 - Create Gradients
 - Apply Transparency
 - Utilize Color selection techniques
 - Use Painting and drawing tools
 - Others – This is not a comprehensive list

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0703 Vector Graphics -- Students will create, manipulate and appropriately use *vector* graphics

- Identify graphic formats and their appropriate use (e.g., PDF, AI, SWF, PNG, EPS, etc.)
- Convert images from bitmap to vector and vice versa
- Export/import images for project requirements (compression, resolution)
- Use drawing tools to create and manipulate Paths (lines and Bezier Curves) using Anchor points, direction handles
- Apply Stroke and Fill (solid and gradient)
- Select using appropriate tools
- Group and ungroup objects
- Apply Styles and Effects
- Transform objects
- Create Layers
- Apply transparency
- Utilize Text Tools
- Others – This is not a comprehensive list

Standard 08 – 2D Animation

2D Animation -- Students will produce 2D animation.

Objectives

0801 Terminology – Students will be literate in the production of 2D animations.

0802 Animations -- Students will create, manipulate and appropriately use animations.

- Identify animation file formats and their appropriate use (e.g., MOV, SWF, GIF, FLA, WMV, etc.)
- Change position, scale, color, and properties of an animated object
- Timeline animation (Cel/Frame-by-frame, Tween)
- Keyframe
- Tween Animation (motion, shape, path)
- Symbol/Instances
- Use internal and external libraries
- Import/Export assets
- Publish/Packaging appropriately for delivery medium

0803 Animation Techniques -- Students will effectively use animation techniques

- Recognize and apply major principles of animation (squash and stretch, anticipation, timing, etc.) [see 12 principles of animation]
- Effectively use storytelling techniques
- Include appropriate audio

Standard 09 – Digital Cinema

Digital Cinema - Students will produce digital video.

Objectives

0901 Terminology – Students will be literate in the production of digital video.

0902 Pre-Production of creating digital video

- Script
- Budget
- Storyboard
- Shot plan
- Cast
- Copyright
- Team roles

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0903 Production stage of creating digital video

- Setup/cleanup
- Appropriately use video equipment (tripod, mic, lights, etc.)
- Demonstrate proper shooting techniques (camera settings, composition, lighting, pov, fov, etc.)

0904 Post-Production stage of creating digital video

- Capture video (Downloading to computer)
- Asset management (naming conventions, cataloging, storage, compression)
- Edit video (transitions, audio/video effects, titling (safe area), aspect ratio, credits, clips, etc.)
- Export for appropriate use CD-ROM, DVD, mobile device or Internet (compression settings, codecs, menus, etc.)
- Recognize and use appropriate video settings (e.g., frame rates, frame size, compression, etc.)
- Identify video formats (e.g., HD, AVI, MOV, SWF, WMV, MP4, FLV, etc.) and broadcast formats

Standard 10 – Digital Audio

Students will produce digital audio.

Objectives

1001 Terminology – Know and review pertinent terminology.

1002 Create digital audio

- Capture sound from an original or existing source
- Edit sound
- Apply special effects to audio files
- Create audio envelopes
- Manipulate pitch, sampling rate, amplitude,
- Recognize and use appropriate settings for various types of sound (voice over/narration, music, sound effects)
- Identify audio formats (e.g., WAV, MID, AU, MP3, AIF, RA, AAC, MP4, M4A, M4B, etc.)
- Import/Export audio (Radio, CD quality)

Standard 11 – Interactive Technologies

Students will explore new and interactive technologies

Objectives

1101 Terminology – Students will be literate in new and interactive technologies.

1102 Develop an awareness of interactive and collaborative technologies

<http://www.go2web20.net/>
<http://www.seomoz.org/web2.0>
<http://multimediateachers.pbwiki.com/>

- Emerging technologies
- Bookmarking: save and share your best web content.(del.icio.us)
- Document Sharing
- Social networking
- Blogs
- Wikis
- Digital Storage
- RSS Feeds
- Video conferencing
- Podcasts
- Others as technologies appear

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Standard 12 –Digital Portfolio

Students will design and develop various projects to add to an interactive digital portfolio.

Objectives

- 1201 Terminology – Students will be literate in the development of creation of an interactive digital portfolio.
- 1202 Create an interactive archive of student work that adheres to copyright and fair use guidelines.
 - 2D raster and vector digital graphics
 - Digital imaging
 - Animation
 - Digital video
 - Digital audio
 - Interactive in design
- 1203 Output projects to an appropriate medium
 - CD, DVD, Video, Web, etc.